

*Horns* with the *Angles of Inclination*, it will be easie to those, that have exactly observed them, and that are skill'd in the higher *Astronomical* Calculations, to compute the *true Place* of the *Moon* in her *Orbite*, that so it may be compared with that of the *Tables*, and with that, which has been observ'd in other places, for the more precise determinating of the *Difference of Meridians* (that being the way, esteem'd by *Kepler* the most certain) and for making a good Judgment of the defect or exactnesse of the *Celestial Tables*.

Then they observe, That the *Beginning* and the *Middle* of this *Eclipse* hapned to be in the *North Eastern Hemisphere*, and the *End*, in the *South-Eastern*. The *first Contact* (as 'twere) of the two *Disks* was observ'd in the *Superior Limb* of the *Sun's Disk* in respect to the *Vertical Line*, and in the *Inferior* in respect to the *Ecliptick*: But the *Middle*, and the *End* were seen in the *Superior Limb*, in respect both to the *Vertical* and the *Ecliptick*: And (what to this Author seems extraordinary) both the *Beginning* and the *End* of this *Eclipse* hapned to be in the *Oriental* part of the *Sun's Disk*.

Lastly, they take notice, that by their Observations it appears, that there is but little exactness in all the *Astronomical Tables*, predicting the *Quantity*, *Beginning* and *Duration* of this *Eclipse*; Those of *Lansbergius* importing, That the *Obscuration* should be of 10. dig. 48'; those of *Ricciolo*, of 9. dig. 1'; and those of *Kepler*, of 7. dig. 30'. 16": Again, that the *Duration* should be of 2 h. 2'. Lastly, The *Beginning* did anticipate the *Ricciolan Tables* by 5. *minuts*; the *End* by 23; and the *Middle*, almost by 11. In the mean time the Author notes, that the *Rudolphin Tables* come nearest to the *Truth*; and withal assures the *Reader* of the goodnesse of the *Instruments* employed in his *Observations*, and of the singular care, he, together with his skilful Assistants, took in making them.

*Some Inquiries and Directions concerning Tides, proposed by Dr. Wallis, for the proving or disproving of his lately published Discourse concerning them.*

The Inquisitive Dr. *Wallis*, having in his lately printed *Hypothesis* of *Tides* intimated, that he had reason to believe, that the *Annual Spring-tides* happen to be rather about the beginnings of *Febr.* and *Nov.* than the two *Aequinoxes*, doth in a late Letter to the *Publisher*, written from *Oxford* in *Aug.* last, desire, *Sea*, some understanding Persons at *London*, or *Greenwich*, but rather nearer the *Sea*, or upon the *Sea-shore*, would make particular Observation of all the *Spring-Tides* (*New-Moon* and *Full-Moon*) between this and the *End of November*; and take account of the *Horr*, and of the *Perpendicular height*: that we may see, whether those in *September*, or those of *November* be highest: And it were not amiss, the *Low waters* were observed too. Which may be easily done by a mark made upon any standing Post in the *Water*, by any

Water-man, or other understanding Person, who dwells by the Water-side.

It would also deserve (thinks he) to be inquired into, whether, when the Tides be highest, the Ebbs be ever lowest, & *contra*; (which is generally affirmed, and almost put out of question) or rather (which suits best with his *Hypothesis*) whether, when the Tides are highest, both in the *Annual* and *Menstrual* Periods, the Low waters be not also highest; and at Neap-Tides, the Ebbs also very low.

He adds, that he should expect, that the Spring-Tides now coming, and those at the beginning of *September*, should not be so high, as those at the middle of *September*; and then lower again at the beginning of *October*, and after that, higher at the middle of *October*, and higher yet about the beginning of *November* (at the usual times of *Spring-tides* after the *New* and *Full*.)

*Considerations and Enquiries concerning Tides, by Sir Robert Moray; likewise for a further search into Dr. Wallis's newly publish'd Hypothesis.*

In regard that the High and Low waters are observed to increase, and decrease regularly at several seasons, according to the Moons age, so as, about the *New* and *Full Moon*, or within two or three daies after, in the Western parts of *Europe*, the *Tides* are at the highest, and about the *Quarter-Moons*, at the lowest, (the former call'd *Spring-tides*, the other *Neap-tides*;) and that according to the height and excesses of the *Tides*, the *Ebbs* in opposition are answerable to them, the heighest Tide having the lowest Ebbe, and the lowest Ebbe, the highest Tide; the *Tides* from the *Quarter* to the highest *Spring-tide* increasing in a certain proportion; and from the *Spring-tide* to the *Quarter-tide* decreasing in like proportion, as is supposed: And also the *Ebbs* rising and falling constantly after the same manner: It is wished, that it may be inquired, in what proportion these Increases and Decreases, Rises and Fallings happen to be in regard of one another?

And 'tis supposed, upon some Observations, made in fit places, by the above-mentioned Gentleman, though, (as himself acknowledges) not thoroughly and exactly performed, that the Increase of the *Tides* is made in the *Proportion of Sines*; the first Increase exceeding the lowest in a small proportion; the next in a greater; the third greater than that; and so on to the mid-most, whereof the excess is greatest, diminishing again from that, to the highest *Spring-Tide*; so as the proportions, before and after the *Middle*, do greatly answer one another, or seem to do so. And likewise, from the highest *Spring-tide*, to the lowest *Neap-tide*, the *Decreases* seem to keep the like proportions; the *Ebbs* rising and falling in like manner and in like proportions. All which is supposed to fall out, when no Wind or other Accident causes an alteration.

And